Study of Intermolecular Interactions In Liquid Butyric Acid and Its Solutions by Raman Spectra

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Parallel and perpendicular polarized components of C=O vibrations Raman spectra for butyric acid differ from one another in some details. This difference as well as a complicated shape of bands in both polarizations, are related to the availability of different H-aggregates in liquid acid. Under strong dilution of acid in CCl_4 are significantly preserved a closed dimer formations. A strong proton-acceptor solvents (dimethylsulfoxide, pyridine, acetonitrile) efficiently destroy the dimer and polymer formations from acid molecules and in spectrum is preserved only band corresponding to free vibrations of C=O group. At dilution in aqueous solutions at comparable concentrations of components the band shape is complicated, but at strong dilution of acid is preserved only one line with ν=1711 cm^{-1} and with halfwidth 63 cm^{-1}, which is meant that at these concentrations in mixture are preserved the associations in the main of one type.